



(19)

(11) Publication number:

63110829

Generated Document.

## PATENT ABSTRACTS OF JAPAN

(21) Application number: 61255829

(51) Intl. Cl.: H04B 9/00 H04B 3/36

(22) Application date: 29.10.86

(30) Priority:

(43) Date of application  
publication: 16.05.88(84) Designated contracting  
states:

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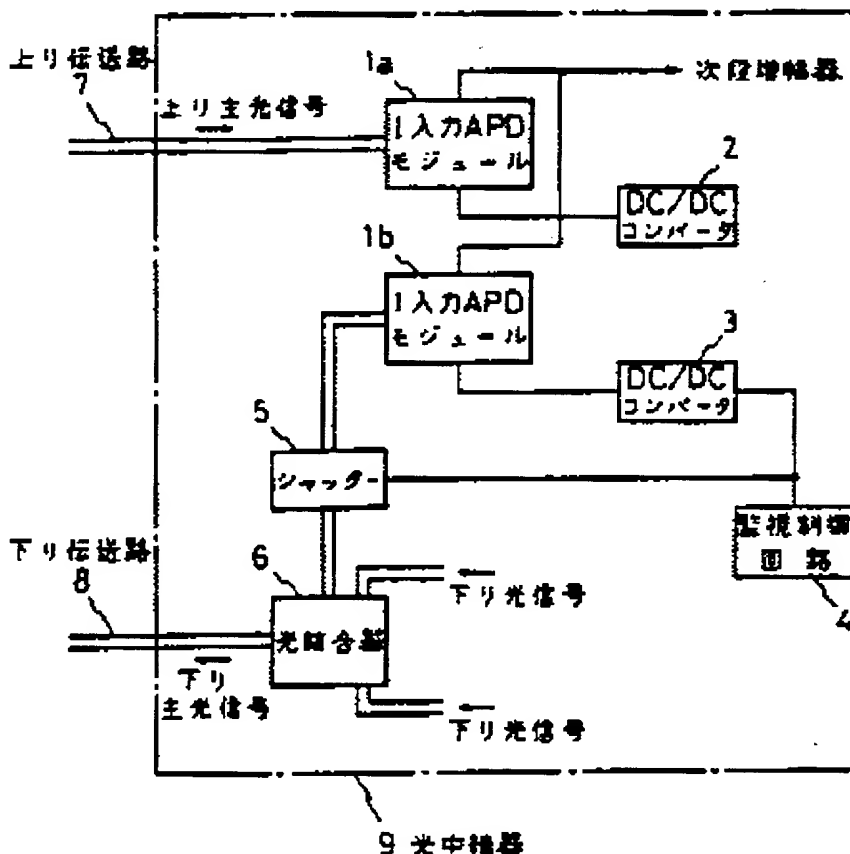
(74) Representative:

(54) OPTICAL LOOPBACK  
MONITORING CIRCUIT

(57) Abstract:

**PURPOSE:** To simplify a module structure by employing one-input avalanche photodiode APD modules for main and loop signals.

**CONSTITUTION:** In order to loop back, an optical relay 9 receives a signal transmitted from a terminal station, and a monitor control circuit 4 outputs a signal to open a shutter 5, and DC/DC converts an output to activate the APD module 1b. When a loop circuit is formed, a loop optical signal that an optical coupler 6 branches from a down main optical signal passes through the shutter 5, and it is inputted to the APD module 1b, photoelectrically transferred and transmitted to an up transmission line as an optical signal. If loop-back is not needed, the monitor control circuit 4 closes the shutter 5 with the aid of its control signal, drops an output 3 subjected to DC/DC conversion, makes it into a voltage with a small capacity and less shot noise, and prevents a deterioration in the sensitivity of a main signal system. Thanks to this constitution, the



deterioration in light receiving  
sensitivity can be prevented without  
making the module complicated.

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